Gigaset SE680 WiMAX

User Guide

This device works in a frequency band for which a general licence might have to be obtained. Please contact your service provider or your National Authority for Frequency Management about licensing before putting this device into service

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For your safety

➔ Please read the safety instructions carefully before putting into service.

Safety precautions

General safety instructions

- Only pass on the Gigaset SE680 WiMAX modem to third parties with this user guide and the assembly instructions.
- The Gigaset SE680 WiMAX modem must only be installed and put into use by a qualified electrician in accordance with the supplied installation instructions.
- National laws and regulations must be considered before putting the device into service.
- These devices are professional IT equipment. Keep the devices beyond the reach of children.

Safety instructions for connection

- Only use undamaged original accessories.
- The outdoor modem must only be installed by qualified electricians in accordance with the assembly instructions.

Safety precautions for the Gigaset SE680 WiMAX modem

- The operation of medical appliances may be affected. Be aware of the technical conditions in your particular environment, e.g. doctor's surgery.
- The Gigaset SE680 WiMAX modem can interfere with the functioning of medical devices such as pacemakers. Keep at least 20 cm between the devices and the pacemaker. For more information consult your doctor.
- Do not operate the indoor unit under the influence of direct heat sources (e.g. directly in the sun).
- The Gigaset SE680 WiMAX modem complies with the regulations on limiting the effect of electromagnetic fields on the general population.
- Do not use the devices in environments with a potential explosion hazard, e.g. auto paint shops or in a humid environment (bathroom etc.).
- Only clean the Gigaset SE680 WiMAX modem with a soft anti-static cloth.

Trademarks

- Microsoft Windows 2000, Windows XP, Windows Vista and Internet Explorer are registered trademarks of the Microsoft Corporation.
- Mozilla Firefox is a registered trademark of the Mozilla Organization.

Information on Specific Absorption Rate (SAR)

This device meets the limits for protecting the health of the public from the effecs of exposure to electromagnetic fields when it is operated in connection with the designated antenna(s) like described in the user manual.

Your device is a radio transmitter and receiver. It is designed and manufactured not to exceed the limits for exposure to emission from electromagnetic fields recommended by international guidelines from the International Commission on Non-Ionizing Radiation Protection (ICNIRP). These limits are part of comprehensive guidelines for the protection of the public and establish permitted levels of exposure to electromagnetic radiation for the population. The guidelines were confirmed by independent scientific organisations through periodic and thorough evaluation of scientific studies. The limits include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The exposure limit employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit stated in the international guidelines is 2.0 W/kg. Tests for SAR are conducted in all frequency bands with the device transmitting at its highest power level with minimum possibledistance to the body. The actual SAR level of the device during operation with the designated antenna(s) is below the maximum value and is additonally decreased by a distance to the device. This is because the device is designed to operate at multiple power levels so as to use only the power required to enable seamless network connection.

Notes on the user guide

This user guide describes how to set up and configure the Gigaset SE680 WiMAX modem. Installation of the individual components is dealt with in the assembly instructions, which you received together with the Gigaset SE680 WiMAX modem.

➔ Please read the user guide carefully before using the devices for the first time.

➔ Also note the product information on the Internet at www.sagem-communications.com

The Gigaset SE680 WiMAX

What is WiMAX?

WiMAX stands for "**W**orldwide **I**nteroperability for **M**icrowave **Acc**ess", a modern wireless network technology that enables fast Internet connection even in remote areas. With WiMAX technology you are no longer dependent on a DSL infrastructure in your home or place of work. Instead, you connect your PC or network wirelessly to radio stations operated in your region by your provider. As a result, WiMAX gives you fast, economical broadband Internet access, even in places that are not connected to the DSL cable network.

The WiMAX standard IEEE 802.16 generally defines WiMAX technology. Your Gigaset SE680 WiMAX modem already meets the latest IEEE 802.16e-2005 standard, a mobile WiMAX standard that offers many extra possibilities.

The Gigaset SE680 WiMAX modem

With your Gigaset SE680 WiMAX modem, you can make use of everything the Internet has to offer:

- **Downloads**
  - Even large files download quickly to your PC.
  - Complex Website designs are no longer characterised by the time they take to download – you can enjoy flash animation and high-resolution graphics immediately after clicking on a link.
- **Audio**
  - Play back audio files straight from the Internet.
  - Listen to the radio via the Internet in superb digital quality.
- **Video**
  - View short or longer films you find on the Internet without tedious waiting times.
  - Watch television via the Internet (IPTV).
  - Use "Video on Demand" and order films that are transmitted to you via the Internet.
- **Real time**
  - Take part in video conferences and feel as if you are sitting in the same room as the people you are talking to.
  - Speak to and see your chat partners.
- **VoIP**
  - Benefit from the economical telephone rates for Internet telephony (Voice over IP, VoIP). Your PC does not even need to be switched on.

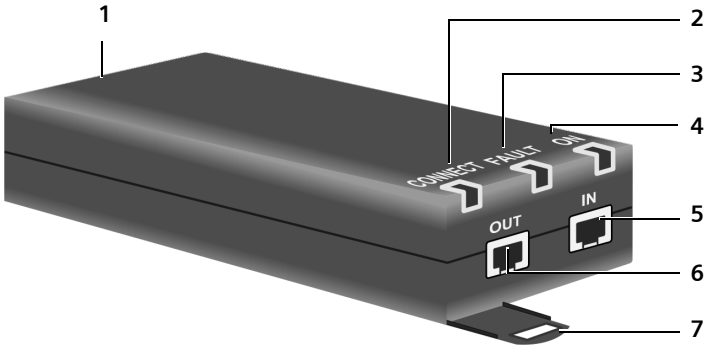
Product features

- Wireless high-speed Internet access with a transmission rate of up to 20Mbps (14 Mbps downlink, 6 Mbps uplink)
- Standards compliant: IEEE 802.16e-2005
- Compatible with all usual operating systems
- Suitable for home and business facilities
- Multi-protocol support: TCP/IP, FTP, HTTP and other Internet related protocols
- Compact design and easy installation
- DHCP server and routing functions
- High performance and Quality of Service
- Optional: external antenna for improved quality of connection

Scope of delivery

- 1 Gigaset SE680 WiMAX modem, comprising:
  - 1 Outdoor modem (to be installed by an electrician)
  - 1 Indoor unit
- 1 power lead (two-pin)
- 1 Ethernet cable (length 1.8 m)
- 1 Set of assembly material, incl. assembly instructions
- 1 User guide
- 1 Outdoor Antenna (optional, to be installed by an electrician)

Connectors and LEDs



1		Connector for the two-pin power lead, see "Switching on the devices" on page 14.
2	**CONNECT**	The LED shows whether or not the indoor unit is properly connected with the outdoor modem. ◆ **Green**: The indoor unit is properly connected with the outdoor modem.
3	**FAULT**	The LED shows whether or not the indoor unit is properly connected with the outdoor modem. ◆ **Red**: The connection between the indoor unit and the outdoor modem is faulty.
4	**ON**	The LED shows that power is being supplied. ◆ **Green**: The Gigaset SE680 WiMAX modem is powered correctly.
5	**IN**	Ethernet connector for data exchange with a PC or network (RJ45, 10/100 Base T), see "Connecting a PC or switch" on page 12.
6	**OUT**	Ethernet connector for connection with the outdoor modem (RJ45, power supply and data transmission), see "Connecting the outdoor modem" on page 12.
7		Clips for wall mounting

Installing the Gigaset SE680 WiMAX modem

The Gigaset SE680 WiMAX modem essentially comprises three components:

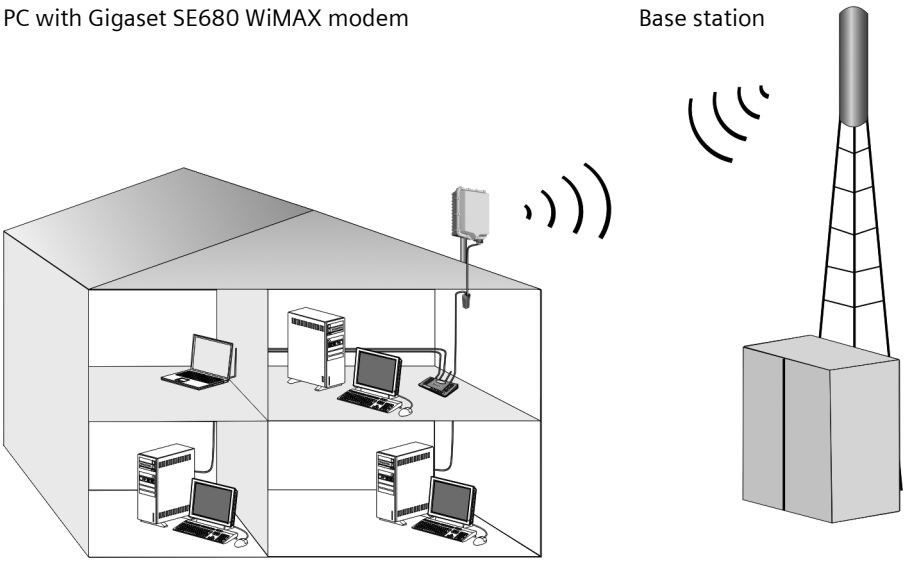
- Outdoor modem with integrated antennas (X-pol)
- External antenna (optional)
- Indoor unit

	The Gigaset SE680 WiMAX modem must be assembled and put into service by a qualified electrician. The information in the enclosed assembly instructions must be noted.

This user guide assumes that the work required for outside installation has already been carried out.
Therefore, installation is described below starting with how to put the indoor unit into service.

PC with Gigaset SE680 WiMAX modem

Base station



Choosing the location

- Choose the location so that you can easily establish the following connections:
  - Ethernet cable socket, which, for example, establishes the connection to the outdoor modem through a wall duct.
  - Ethernet cable socket for connection with a PC or network.
  - Connection of the power lead with a mains socket.
- First choose the location for the indoor unit:
  - Consider the stated temperature range for the indoor unit when choosing the location (see "Specifications" on page 46).
- The indoor unit can be operated either on a horizontal surface or mounted on a wall. Make sure the connections cannot become loose and that the LEDs are clearly visible.
- Lay the cables in such a way that nobody can tread on or trip over them.

System requirements

To install and get started with the indoor unit, the following requirements must be fulfilled:

- The outdoor modem has been properly installed and is ready for use. The associated Ethernet cable is fitted with an RJ45 plug and ends close to the indoor unit.
- PC with a LAN interface 10/100BaseT **or** an Ethernet network 10/100BaseT. The network adapter must support one of the following modes: 10BaseT Full Duplex, 100BaseT Half Duplex, 100BaseT Full Duplex.
- The TCP/IP protocol has to be set up on the PC (standard installation for Windows XP and Windows Vista; if you are using a different Windows operating system, read the separate instructions on network configuration on the product CD, if necessary).

Wall mounting (optional)

The indoor unit is fitted with two clips for wall mounting. Wall mounting is not absolutely necessary, but is recommended to make the cable connections mechanically secure.

➡ Use screws, anchor fittings and cable clamps to mount the indoor unit on a wall. Make sure the LEDs are easily visible.

Connecting the Gigaset SE680 WiMAX modem

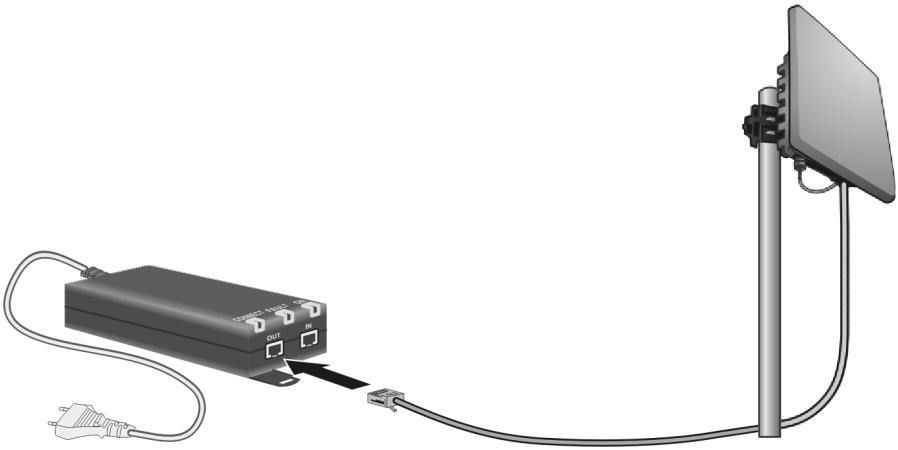
Set up the connections on the indoor unit in the following order:

1. Connect the outdoor modem.
2. Connect the PC or the switch/hub.
3. Connect the indoor unit to the mains power supply and switch all the devices on.

Connecting the outdoor modem

After the outdoor modem has been installed correctly, the associated Ethernet cable (with RJ45 plug) is available close to the indoor unit.

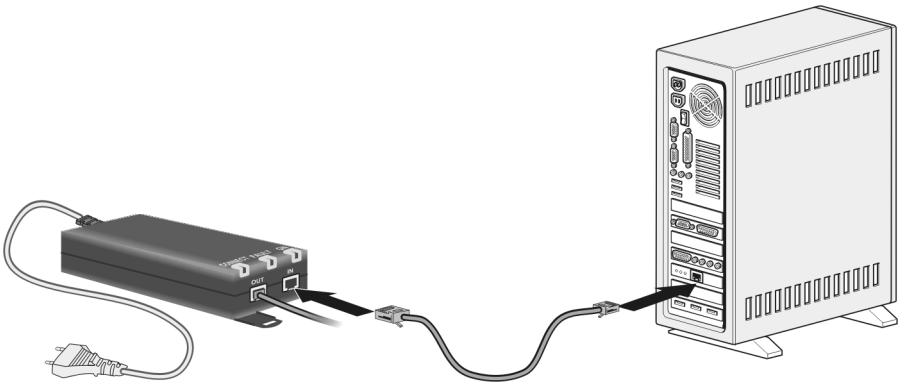
➔ Insert the Ethernet cable plug into the **OUT** socket on the indoor unit. You should be able to hear the clips on the RJ45 plug click into place.



Connecting a PC or switch

!	Use either the Ethernet cable that is supplied or a standard network cable (CAT-5) for the connection to the PC or switch. It does not matter if the Ethernet cable has straight or crossed wiring. You must use a shielded Ethernet cable.

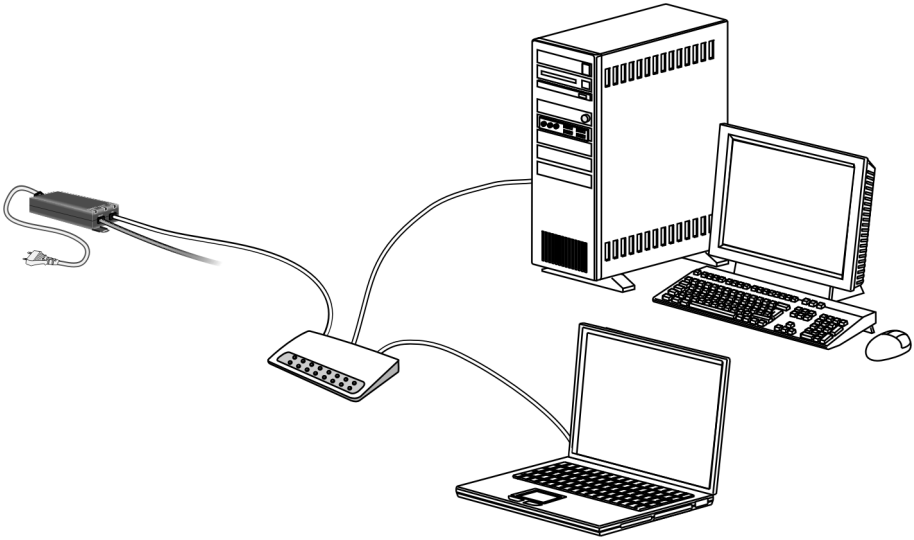
Connecting the indoor unit to a PC



➔ Connect an Ethernet cable plug to the **IN** socket on the indoor unit.

➔ Connect the other plug of the Ethernet cable to the LAN interface on the PC.

Connecting the indoor unit to a switch



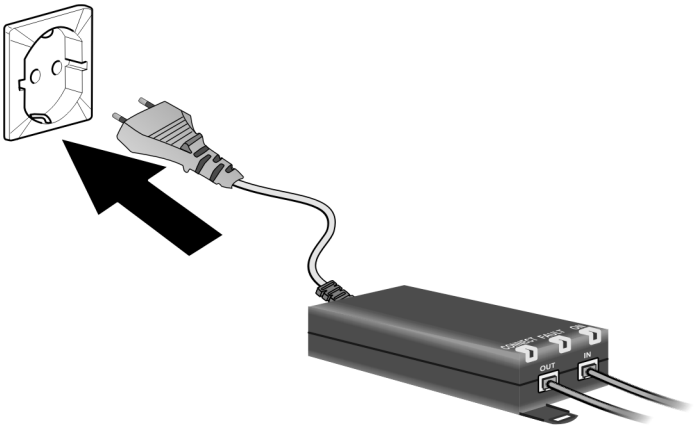
➔ Connect an Ethernet cable plug to the **IN** socket on the indoor unit.

➔ Connect the other Ethernet cable plug to the switch or hub.

➔ For configuration, please refer to the user guide of your switch or hub.

Switching on the devices

!	Only use the Gigaset SE680 WiMAX modem with the supplied mains cable. Refernece number: C39280-Z4-C584 Manufacturer: PhiHong Type: POE30U-560(G)-S Input: 100-240V, 0.95A AC Output: 56V, 0,55A DC



➞ Connect the power lead to the indoor unit.

➞ Connect the power lead of the indoor unit to the mains power supply. The outdoor modem is powered via the Ethernet cable and does not require its own mains connection.
The system starts booting and performs a self-test.

After the self-test, the Gigaset SE680 WiMAX modem continually attempts to register with a base station. Registration with the base station may be successful immediately; otherwise, registration will take place when your Gigaset SE680 WiMAX modem is being configured.

➞ Check the LEDs during startup:

LEDs during startup:

– The **ON** power supply LED lights up **green**, and the Gigaset SE680 WiMAX modem starts a self-test.

– The **FAULT** LED (red) and the **CONNECT** LED (green) light up for approximately 1 second and then go out. If the connection to the outdoor modem is then found to be free from errors, the **CONNECT** LED is continuously lit up **green**. If an error occurs, the FAULT and CONNECT LEDs start to flash alternately at regular intervals.

Configuration with the Web browser

You do not need to install any software on your PC to configure your Gigaset SE680 WiMAX modem; the configuration progam is stored on the device. Open this software in the same way as an Internet page in the Web browser and make the required settings. Your settings are then stored directly on the device.

On startup, the Basic Setup Wizard helps you set up a connection to the WiMAX network and configure your Internet access.

i	**For experienced users:** – IP address: 192.168.2.1 – Subnet mask: 255.255.255.0

Presentation of the configuration progam

To configure your Gigaset SE680 WiMAX modem, we recommend the Microsoft Internet Explorer Version 7.0 or higher or Mozilla Firefox Version 2.0 or higher Web browser. However, you can also use most other or older Web browsers.

i	Number and amount of functions and settings provided by the configuration program may differ specific to a project.

User interface

Launching the user interface

➡ Open your Web browser.

➡ Enter the IP address of your Gigaset SE680 WiMAX modem in the address field of your Web browser:

`http://192.168.2.1`

➡ Press Enter (Return).

If a system password has been set up on your Gigaset SE680 WiMAX, the login screen will now open.

Enter the system password supplied by your provider in the text box and click ***Ok***.The start page (Home) of the user interface opens, in which you can change the language if necessary (see page 18).

Change the system password later to one of your own (see "System password" on page 31).

If no system password has been set up on your Gigaset SE680 WiMAX, a security warning will appear first. You should then assign a system password as soon as possible.

➡ Confirm the security warning with ***Ok***.

The user interface start page opens.

If the login screen does not open:

➔ Check the connections; see "Connecting the Gigaset SE680 WiMAX modem" on page 12.

➔ If you use a firewall on the PC, it must allow connection to the Gigaset SE680 WiMAX. If applicable, switch off the firewall for a test; if you can then open the login screen, configure the firewall accordingly. For details, refer to the user guide for your firewall.

If you have changed the standard settings on your PC, you might not be able to open the configuration pages.

➔ For details on how to find and rectify the fault, see "Troubleshooting" on page 39.

Saving the user interface address

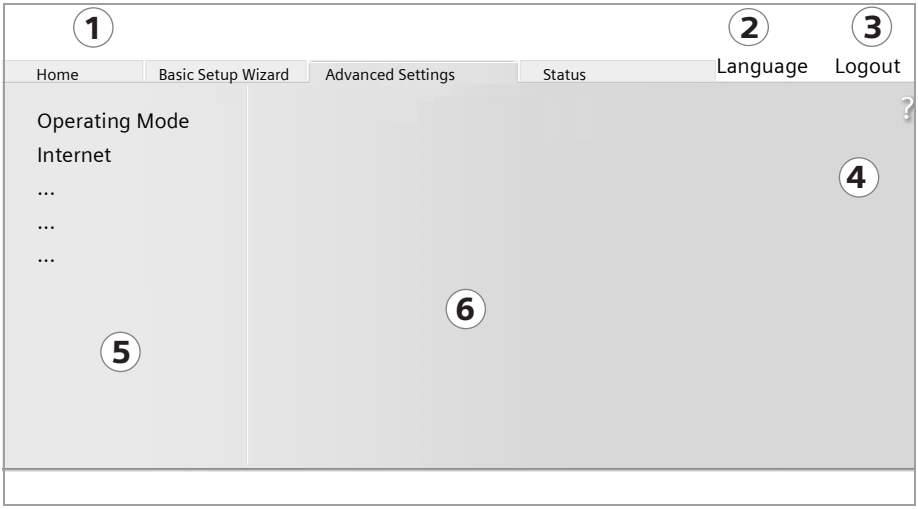
➔ You can add the address of the registration page to your favourites/bookmarks so that you will no longer need to enter the IP address manually in future:

– Internet Explorer: ***Add to Favorites*** button

– Firefox: ***Bookmarks*** > ***Add Bookmark***

User interface elements

The user interface you open with the Web browser is divided into the following sections:



(1) **Tab selection:**
Open the ***Home***, ***Basic Setup Wizard***, ***Advanced Settings*** or ***Status*** tabs to display the contents of each configuration area.

(2) **Language button:**
Select your language.

③ **Logout button:**
The button is only displayed if a system password is set up.
Log off from your Gigaset SE680 WiMAX modem.

④ **Open Help window button:**
Open the online Help relating to the menu item currently in the working area.

⑤ **Menu area:**
Click the menu items to display the respective pages of the currently open configuration area or a submenu.

⑥ **Working area:**
Check the settings on your Gigaset SE680 WiMAX modem and change them as necessary.

Buttons

	Open online Help. Click on this button if you require information about the screen you currently have open. The corresponding Help topic is opened.
Logout	Button with which you end the connection between the PC and the Gigaset SE680 WiMAX modem.
Back	Return to the previous screen in the Basic Setup Wizard.
Next	Move on to the next screen in the Basic Setup Wizard.
Cancel	Changed settings are not applied and you return to the next highest level.
Ok	Save the settings and return to the next highest level.
End	Save the settings and exit the Basic Setup Wizard.

You will see other buttons depending on the screen currently open. If you require further information about these, open the online Help at the appropriate place using the question mark button.

Input fields

On the configuration screens, change the required settings using the following input fields:

Option fields:
Two or more fields, of which one is activated. As soon as you click in another option field, it is activated and the one previously selected is reset. You will find option buttons wherever there is a choice between several possibilities.

Text field:
Enter text or digits. Click in the field to activate input mode. You will find text fields at points where you can specify text or numbers as required, e.g. a new system password.

Setting the language

The user interface is initially displayed in English. However, you can select another language, e.g. German, French, Spanish.

➔ If you wish to set your language, click on the ***Language*** button at the top right. This opens the page for setting the language.

➔ Click on the arrow next to the selection field to open it and select your language.

➔ Click on ***Ok*** to change the language.

Opening online Help

There is an online Help for each screen of the configuration progam, which you can open directly on the screen.

➔ Click on the question mark button at the top right.
The online Help is shown in the right pane of the configuration progam.

➔ If necessary, click on ***Open Help window*** to open the online Help in a separate window.

Menu structure

The menu of the user interface on your Gigaset SE680 WiMAX modem is split into the following main areas: ***Home***, ***Basic Setup Wizard***, ***Advanced Settings*** and ***Status***. Under these menu options, you will find the following areas:

Home	Brief description of all the menus in your Gigaset SE680 WiMAX modem, as well as the connection status and the language change feature; see "User interface" on page 15.	
Basic Setup Wizard	Establish a connection to the WiMAX network, optimise the antenna direction and set up your Internet connection, see "Basic Setup Wizard" on page 20.	
Advanced Settings	Configure your Internet access and your local network and perform administration tasks. For example, you can enter a system password for access to your Gigaset SE680 WiMAX or change it, see "Configuration with the Web browser" on page 15.	
Status	Obtain information about the operating status of your Gigaset SE680 WiMAX modem and read off the device and version numbers as well as IP addresses; see "Status" on page 34.	
	Internet	See "Internet" on page 35.
	Local Network	See "Local network LAN" on page 36.
	Device Status	See "Device status" on page 36.
	Radio Status	See "Radio status" on page 37.

The Home page

Once you have logged in successfully to the Gigaset SE680 WiMAX modem, you will see the ***Home*** page for the device software. The start screen offers an overview of all areas of the configuration progam:

Menu	Description
Basic Setup Wizard	Perform the basic configuration and set up the radio connection to the WiMAX network (see page 20).
Advanced Settings	Perform advanced configuration and administration tasks (see page 23).
Status	Obtain information on the status of your Gigaset SE680 WiMAX (see page 34).

In the area to the right of the start screen, you will see the connection status of your Gigaset SE680 WiMAX modem:

- ***connected*** = The Gigaset SE680 WiMAX modem has established a radio connection with a WiMAX network. You will see the connection duration in brackets and in the format ddd:hh:mm:ss (d=days, h=hours, m=minutes, s=seconds).
- ***disconnected*** = The Gigaset SE680 WiMAX modem is trying to establish a connection with a WiMAX network.

To configure your Gigaset SE680 WiMAX modem, use the Basic Setup Wizard, which will help you establish a radio connection.

Connecting to the Internet manually

Once you have configured your Internet access (see page 20 and page 25), you can establish a manual connection to the Internet on the start screen if you have selected ***Connect on demand*** as the Connection mode.

To establish or end an Internet connection manually:

➥ Open the start screen of the Gigaset SE680 WiMAX as described on page 15.

➥ If you have already started the user interface, click the ***Home*** tab at the top left of the window.

➥ Click ***Connect*** to establish a connection to the Internet.

➥ Click ***Disconnect*** if you no longer require the connection.

Basic Setup Wizard

The Basic Setup Wizard helps you start up your device and guides you step by step through the configuration process with the most important settings.

The Basic Setup Wizard comprises the following steps:

- Entering the access data for the WiMAX network
- Configuring the Internet access
- Positioning the device
- Scanning the frequencies to establish a radio connection with a WiMAX network
- Exact alignment of the antenna to optimise the quality of the connection

i	You can check all the configuration settings that you make with the Basic Setup Wizard later via the Advanced Settings menus and, if necessary, change them, see "Advanced Settings" on page 23.

Starting the Basic Setup Wizard

➔ To start the Basic Setup Wizard, click the ***Basic Setup Wizard*** tab.

➔ Click ***Next***.

Entering access data for the WiMAX network

On this page you enter the data for authentication of your device on the WiMAX base station. You will need the access data supplied by your WiMAX operator for this.

➔ Enter the access data and click ***Next***.

Setting up Internet access

To allow users in your local network access to the Internet, set up the Internet connection of your device using the information supplied by your Internet provider.

➔ Enter the access data and click ***Next***.

i	Your Gigaset SE680 WiMAX can be used as an Internet router or bridge. For more on this see "Setting the operating mode" on page 24.

Adjusting the antenna

➔ Adjust your Gigaset SE680 WiMAX modem facing towards the base station.

➔ Click ***Next***.

Establishing a radio connection with a WiMAX network

The Basic Setup Wizard will now scan the frequencies to establish an initial radio connection to a WiMAX network.

The frequency scan begins automatically. A progress bar indicates how far the scan has progressed. In addition, you will see in the ***Remaining time*** area roughly how much time is still needed for the complete scan. Depending on how your Gigaset SE680 WiMAX modem has been preconfigured by your provider, the scan can last several minutes before the first radio connection is established.

i	During the scan, the Gigaset SE680 WiMAX modem or antenna must not be moved; this is the only way to guarantee a complete scan with the current antenna alignment.

As soon as a radio connection has been established with a WiMAX network, the scan will end. The progress bar is fully filled in and the display in the ***Remaining time*** area jumps to ***0 seconds***.

➡ If the scan has been successful, read on in Chapter "Precisely aligning the antenna" on page 21.

If the scan has not been successful:

The integrated antenna is a directional antenna this means that it must at least be pointing roughly in the direction of a WiMAX network base station in order to establish a radio connection. The access data must also have been entered correctly.

If the scan was not successful:

➡ First check your access data by going back to the WiMAX configuration page (see page 20).

➡ If you have entered your access data correctly, adjust the Gigaset SE680 WiMAX modem.

➡ Turn your Gigaset SE680 WiMAX modem by approx. 20°. Turn or move the device a little at a time and note the signal strength display. Use this to move the antenna to the position with the best signal strength.

Precisely aligning the antenna

Once you have established a wireless connection to a WiMAX network, align your Gigaset SE680 WiMAX modem or antenna precisely using the Basic Setup Wizard.

i	Take extra care to align the Gigaset SE680 WiMAX modem precisely. The better the connection quality, the faster your Internet connection will be in the future.

To obtain precise alignment of the Gigaset SE680 WiMAX modem or antenna, turn it a little at a time.

➞ When a connection to a WiMAX network has been established, click on ***Next*** to make fine adjustments to the antenna.

The quality of the radio connection is represented graphically by a signal strength bar. The longer the bar is, the better the radio connection. Try to obtain the best possible radio connection setting.

➞ If you are unable to check the display of the signal strength on the screen while aligning the antenna:
Activate the ***Audible feedback*** option to obtain information about the signal strength by means of beeps. The closer together the sequence of beeps, the better the connection quality.

➞ Turn or move the Gigaset SE680 WiMAX modem or turn the antenna a little at a time and note the signal strength display. Use this to move the antenna to the position with the best signal strength.

If you have turned your Gigaset SE680 WiMAX modem or the antenna too far, the connection might break. You should then return to the alignment that provided a connection and repeat the procedure for establishing a connection to the WiMAX network. Then make any fine adjustments step by step.

When your Gigaset SE680 WiMAX modem **or external antenna is optimally aligned:**

➞ Click ***End*** to close the Basic Setup Wizard and apply the settings you have made.

Make sure that in future your Gigaset SE680 WiMAX modem or external antenna is always in the set position.

Advanced Settings

In the ***Advanced Settings*** menu, you can configure all the options for the Gigaset SE680 WiMAX. If required, you can also change the settings you made using the Basic Setup Wizard. The following table contains the options available in this menu.

Menu	Description
Operating Mode	Here you can define whether your Gigaset SE680 WiMAX will be used as a router or a bridge for the Internet access (page 25).
Internet	Here you can configure your Internet access. This menu covers all setting options for the Internet (page 25).
Local Network	Here you can configure your local network, e.g. change the private IP address of the Gigaset SE680 WiMAX or make settings for the DHCP server (page 29).
WiMAX configuration	Here you can change the access data for your WiMAX access (page 30).
Administration	Here you can do various administration tasks, e.g. assign a system password (page 31) or reset the configuration to the factory defaults (page 32). You can also load new firmware (page 33)

All Advanced Settings pages contain ***Ok*** and ***Cancel*** buttons.

➥ Click ***Ok*** to confirm your entries.

➥ Click ***Cancel*** to close a page without applying the changes.

Setting the operating mode

Via the operating mode, you define the role your Gigaset SE680 WiMAX will play when establishing and administering Internet connections.

You can run your Gigaset SE680 WiMAX in the following operating modes:

Router Your Gigaset SE680 WiMAX serves as an Internet router for the network components connected to the LAN port, i.e. it establishes the connection to the Internet and ensures the transfer of the communication data to and from the Internet (default).

Bridge The network components initiate and control their Internet connection themselves. Your Gigaset SE680 WiMAX only allows the communication data to and from the Internet to pass through.

➥ To change the operating mode, open the ***Advanced Settings*** tab and select ***Operating Mode*** from the menu.

When you change the operating mode, your device is restarted.

In ***Bridge*** mode, the following functions are no longer available:

- The DHCP server of the Gigaset SE680 WiMAX is deactivated (see page 29) because the network components receive IP addresses in the public network.

  If you want to access the configuration program of the Gigaset SE680 WiMAX via your PC, you must connect the PC directly to the LAN port. You must also temporarily assign it a static IP address in the address range of the Gigaset SE680 WiMAX. If you want to use the Internet again after this, reset your PC to "automatic IP address". For details see the document "Configuring the local area network" on the product CD.
- The firewall of your Gigaset SE680 WiMAX is disabled and cannot be enabled (see page 26).
- The NAT function of your Gigaset SE680 WiMAX is disabled. This means that the functions Port Forwarding (see page 27) and Exposed Host (see page 28) are not available.

If necessary you may have to protect your network components against unwelcome access from the Internet by appropriate means (e.g. firewall software).

Configuring Internet access

If you have configured the Gigaset SE680 WiMAX using the Basic Setup Wizard, you have also configured your Internet access. You can check or change these settings in the ***Internet*** menu.

This menu also offers you a wide range of possibilities for setting up security settings and limiting access to the Internet as well as for providing your own services on the Internet.

You can carry out the following via the ***Internet*** menu:

Internet Connection	Check and edit the Internet connection of the Gigaset SE680 WiMAX (for further information see below),
DNS Servers	Make DNS server settings (page 26),
Firewall	Protect the network against hacker attacks (see page 26),
Port Forwarding	Provide your own services on the Internet (page 27),
Exposed Host	Opening the firewall for a selected PC (page 28).

Setting up the Internet Connection

You can set up or change the configuration of your Internet connection in this screen. All the settings you make here must coincide with the features your Internet service provider makes available to you. Incorrect information can lead to problems with your Internet connection.

➥ Open the ***Advanced Settings*** tab and on the ***Internet*** menu select ***Internet Connection***.

➥ Enter the data you have been given by your service provider.

➥ Select the ***Protocol*** used for Internet access.

- ***PPPoE***
- ***Static***
- ***Obtain automatically***

➥ Apply the default settings for the other parameters unless your service provider has given you other data.

Connection mode

For a PPPoE connection (Point-to-Point over Ethernet), specify the ***Connection mode***:

Always on

This gives the users in your network a constantly active Internet connection. Only choose this setting if your Internet tariff is not time-dependent.

If necessary you can terminate the Internet connection manually (see page 19).

Connect on demand

The Internet connection is only established if an application, e.g. an Internet browser or an e-mail program, requests it.

PPPoE pass-through

If you activate the ***PPPoE pass-through*** function, a PC in the network can connect to the Internet via its own connection ID. The router puts this connection through.

Setting up DNS servers

DNS (Domain Name System) is a decentralised database on the Internet which allocates clearly understandable Internet names (domains) to the actual addresses of PCs and services (e.g. IP addresses). The DNS servers required for access to this database are normally provided by your provider and do not have to be set up specially. But if necessary you can change them here.

➔ Open the ***Advanced Settings*** tab and on the ***Internet*** menu select ***DNS Servers***.

➔ Activate the ***Use custom DNS servers*** function and enter the IP addresses for your ***Preferred DNS server*** and the ***Alternate DNS server***.

Enabling or disabling the firewall

Your Gigaset SE680 WiMAX comes with an integrated firewall, which protects your device and network against unauthorised access from the Internet. If the firewall is enabled, your device can identify certain events, e.g. suspicious incoming data packets from the Internet, as attacks and avert them (hacker defence). Your device's firewall is enabled by default.

ϟ	We urgently recommend that you leave the firewall of your Gigaset SE680 WiMAX enabled, otherwise your network will no longer be protected against hacker attacks from the Internet.

If you still want to disable the firewall:

➔ Open the ***Advanced Settings*** tab and on the ***Internet*** menu select ***Firewall***.

➔ Disable the firewall.

i	This function is not available in **Bridge** operating mode, see "Configuring Internet access" on page 25. PCs in your network should be protected by a separate firewall. You can set up protection against DoS (Denial of Service) attacks in Bridge mode via the local network configuration, see "LAN configuration" on page 29.

Port Forwarding

The Gigaset SE680 WiMAX comes with the NAT (Network Address Translation) function, which is always activated in Router operating mode. With address mapping, multiple users in the local network can access the Internet via the public IP address. All the local IP addresses are assigned to the router's public IP address by default. All IP addresses of PCs in the local network are converted to the router's public IP address when accessing the Internet.

Most Internet applications can be executed behind the NAT firewall without any problems. However, some applications - such as Internet games - require users in the Internet to send requests to users in the local network so that the players can communicate with each other. Sometimes these applications also require several ports to communicate through. Such applications do not work if NAT is active.

Using port forwarding (the forwarding of requests to particular ports) the router is forced to send requests from the Internet for a certain service, for example a game, to the appropriate port(s) on the PC on which the game is running. If you configure Port Forwarding, the Gigaset SE680 WiMAX outwardly assumes the role of the server. It receives requests from remote users under its public IP address and automatically redirects them to local PCs. The private IP addresses of the servers on the local network remain protected.

Internet services are addressed via defined port numbers. The Gigaset SE680 WiMAX needs a mapping table of the port numbers to redirect the service requests to the servers that actually provide the service. Port Forwarding has to be configured for this purpose.

➞ Open the ***Advanced Settings*** tab and on the ***Internet*** menu select ***Port Forwarding***.

➞ Define the list of services for which you want requests from the Internet to be forwarded.

Important services are already included in the ***Predefined applications*** selection field. The list can hold up to 20 entries.

i	The IP addresses of the PCs for which you set up port forwarding must remain unchanged. If the IP addresses of the PCs are assigned via the DHCP server of the Gigaset SE680 WiMAX, you must select the option ***Never expires*** as the ***Lease time*** when configuring the DHCP server or assign static IP addresses to the PCs, see "Configuring the DHCP server" on page 29.

i	This function is not available in **Bridge** operating mode, see "Configuring Internet access" on page 25.

Opening the firewall for a selected PC (Exposed Host)

You can set up a client in your local network to be a so-called "exposed host". Your device will then forward all incoming requests from the Internet to this client, with the exception of requests to the port numbers already defined via port forwarding. You can then, for example, operate your own Web server on one of the clients in your local network and make it accessible to Internet users.

As the exposed host, the local client is directly visible to the Internet and therefore particularly vulnerable to attacks (e.g. hacker attacks). Only activate this function if it is absolutely necessary (e.g. to operate a Web server) and other functions (e.g. port forwarding) are not adequate. In this case you should take appropriate measures for the clients concerned.

➞ Open the ***Advanced Settings*** tab and on the ***Internet*** menu select ***Exposed Host***.

➞ Define the list of PCs you want to set up as exposed hosts.

➞ Activate a PC which you want to function as the current exposed host. Only one PC at a time can be selected.

i	The IP addresses of the PCs you want to set up as exposed hosts must remain unchanged. If the IP addresses of the PCs are assigned via the DHCP server of the Gigaset SE680 WiMAX, you must select the option ***Never expires*** as the ***Lease time*** when configuring the DHCP server or assign static IP addresses to the PCs, see "Configuring the DHCP server" on page 29.

i	This function is not available in **Bridge** operating mode, see "Configuring Internet access" on page 25.

LAN configuration

With the help of the LAN configuration you can change the preset values for the computer name and the private IP address for your Gigaset SE680 WiMAX and configure the integrated DHCP server.

➞ Open the ***Advanced Settings*** tab and select ***Local Network***.

The preset IP address is 192.168.2.1. This is the private IP address of the Gigaset SE680 WiMAX. This is the address under which the device can be reached in the local network. It can be freely assigned from the block of available addresses. The IP address under which the Gigaset SE680 WiMAX can be reached from outside is assigned by the Internet service provider. The default Subnet mask for the local network administered by the Gigaset SE680 WiMAX is 255.255.255.0.

Please note which subnet mask is set when assigning the IP address. The preset subnet mask defines the first three parts of the IP address which must be identical for all network components (including routers).

We recommend that you use an address from a block that is reserved for private use. This address block is 192.168.1.1 to 192.168.255.254.

Configuring the DHCP server

The Gigaset SE680 WiMAX has a DHCP server for which the factory setting is active. Consequently, the IP addresses of the PCs are automatically assigned by the Gigaset SE680 WiMAX.

i	◆ If the DHCP server for the Gigaset SE680 WiMAX is activated, you can configure the network setting on the PC so that the option ***Obtain an IP address automatically*** is set up. ◆ If you deactivate the DHCP server, you will have to assign a static IP address for the PCs that use the network settings. For more information see the document “Configuring the local area network” on the CD.

➞ If the DHCP server is active, you can define a ***Lease time***. The lease time indicates how long the client may use the allocated IP configuration.

Note:
If you select ***Never expires***, the IP addresses are never changed. Activate this option if you want to make NAT or firewall settings using the IP addresses of the PCs; otherwise you have to assign static IP addresses to these PCs.

➞ Define the range of IP addresses the Gigaset SE680 WiMAX should use to automatically assign IP addresses to the PCs. Define the ***Start IP*** and the ***End IP***.

Assigning static IP addresses to individual PCs

Even if you have activated the DHCP server, you can still assign a static IP address to individual PCs (e.g. when setting up these PCs for NAT functions).

➞ Enter the ***MAC address*** of the PC to which you want to assign a static IP address and the ***IP address*** you wish to assign to the PC.

Ageing time for MAC table

When a PC in the network is accessed, your Gigaset SE680 WiMAX writes the MAC address and port number in a MAC table to speed up further accesses. The entry in the MAC table is deleted after a fixed time. If necessary you can change this value via the ***MAC table ageing time*** parameter.

Protection against DoS attacks

DoS (Denial of Service) attacks are attacks on a system in the network to make its services unusable. This is basically done by overloading the system by constantly sending requests. In Bridge mode, the Gigaset SE680 WiMAX provides protection against DoS attacks, which you can enable or disable via the ***activate DOS protection*** parameter.

WiMAX configuration

On this page you enter the data for authentication of your device on the WiMAX base station. You will need the access data supplied by your WiMAX operator for this.

If you have executed the Basic Setup Wizard, you will already have entered these details there. If necessary you can change them here.

➞ Open the ***Advanced Settings*** tab and select ***WiMAX configuration*** from the menu.

Administration

The user interface **Administration** menu includes several helpful functions for administering your Gigaset SE680 WiMAX.

System Password	Changes the system password (page 31)
Factory reset	Reset the Gigaset SE680 WiMAX to the factory settings (page 32)
Restart	Reboots the device (page 33)
Firmware Update	Updates firmware (page 33)

System password

The system password is the password for configuring your Gigaset SE680 WiMAX and is requested when you open the configuration pages, see "Launching the user interface" on page 15.

If the device came from your provider with a preset system password, you can change this password here.

!	The system password protects your Gigaset SE680 WiMAX and your local network from unauthorised access. For this reason, it is important to set up a password and change the default password.

➥ Open the ***Advanced Settings*** tab and on the ***Administration*** menu select ***System Password***.

Features of a secure password

A password should be difficult for unauthorised users to work out. Note the following points when choosing a password:

- The more characters a password has, the more secure it is.
- Choose a series of characters that is as varied as possible (not AAAA, 0000) and alternate between letters and numbers.
- Do not use any term that could be found in a dictionary.
- Do not use sequential characters (not 123456, abcd) and no recognisable system (not 1a2b3c).
- Never use a password several times for different applications.
- Never save a password on the PC. Instead, make a note of it and store it in a secure place.
- Change your passwords regularly.

Changing the password

➔ Enter the current password in the ***Current password*** field. If no default system password has been set, leave this field empty.

➔ Enter a new password in the ***New password*** field.

– Select any series of characters with a minimum length of 4 and a maximum length of 20 characters. You can use the following characters: A–Z, a–z, 0–9 as well as the following special characters: ! " # $ % & ' ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ { | } ~.

– Note down your new password on a sheet of paper and store it in secure place.

➔ Enter your new password in the ***Confirm new password*** field again. This entry is case-sensitive.

The new password can only be activated if both entries match. This detects typing errors when the password is entered.

➔ Finally, click ***Ok*** to accept your change and to activate the new password.
The new password is valid immediately for each instance the configuration is called up.

!	**The configuration of the Gigaset SE680 WiMAX cannot be accessed if you do not enter a valid password.** In this case it is only possible to ask your provider to reset the password of the Gigaset SE680 WiMAX modem.

Restoring factory settings

You can reset the Gigaset SE680 WiMAX to the factory settings. You should do this before making the device available to others or exchanging it through the dealer. Otherwise unauthorised users may use the Internet access data at your expense.

➔ Open the ***Advanced Settings*** tab and on the ***Administration*** menu select ***Factory reset***.

➔ Click ***Ok.***

A window will appear prompting you to confirm the procedure.

i	Please remember that when the device is fully reset, **all** the configuration settings are returned to the factory settings. This means that you will have to completely reconfigure the Gigaset SE680 WiMAX.

Restart

If the Gigaset SE680 WiMAX is not operating properly, you can reboot it. It should then be ready for use again.

➔ Open the ***Advanced Settings*** tab and on the ***Administration*** menu select ***Restart***.

➔ Click ***Ok*** to reboot the device.

A window will appear prompting you to confirm the procedure.

Updating the firmware

If your WiMAX provider provides a new downloadable firmware version for your Gigaset SE680 WiMAX with new functions or to fix errors, you can update your device quickly and easily.

➔ First download the relevant firmware file from the Internet and save it on your PC. Read the information provided carefully.

!	Only update the firmware if there is a new version of the firmware that is currently installed on your device on the Internet. The firmware version currently installed is shown under ***Active image version***.

➔ Open the ***Advanced Settings*** tab and on the ***Administration*** menu select ***Firmware Update***.

➔ Enter the path and file name of the firmware file to be installed or click ***Browse*** to select a file on your PC.

➔ Click ***Ok*** to start the firmware update.

⚡	Do not disconnect your Gigaset SE680 WiMAX from the PC or the power supply during the firmware update, as this could damage the device. It may take up to five minutes before the device is ready for use again.

Status

You can check the status of your Gigaset SE680 WiMAX with the pages in the ***Status*** menu. The menu is divided into several individual pages opened by clicking the entries in the menu area. To help with orientation, in the following sections the path is placed first so that you can quickly find the status messages described.
For example, with the following address you can open the settings of your LAN: ***Status > Local Network***.

i	If you have problems, before contacting your provider or customer service, check the status of your Gigaset SE680 WiMAX. When looking for the fault, your provider or customer service will need some details that you will find on the status pages.

You will find the most important status information summarised on the homepage. For detailed information, click an entry in the submenu.

Information on the Status homepage

Connection status The status of the radio connection with the WiMAX network is displayed as follows:

- ***connected*** = The Gigaset SE680 WiMAX has established a radio connection with a WiMAX network. You will see the connection duration in brackets and in the format ddd:hh:mm:ss (d=days, h=hours, m=minutes, s=seconds).
- ***disconnected*** = The Gigaset SE680 WiMAX is trying to establish a connection with a WiMAX network.

IP address For an existing Internet connection only:
Displays the IP address used by the Gigaset SE680 WiMAX on the Internet.

IP address IP address used by the Gigaset SE680 WiMAX in your local network.

DHCP server Displays whether the DHCP server of your Gigaset SE680 WiMAX is activated. As DHCP server, your Gigaset SE680 WiMAX assigns an IP address to all the PCs in the network. DHCP must be activated on a PC for the PC to receive an IP address from the DHCP server. For more information see the document "Configuring the local area network" on the product CD.

System time Displays the current date and time. The date and time are transmitted to your Gigaset SE680 WiMAX from the WiMAX network.

Operating Mode Role played by your Gigaset SE680 WiMAX during connection setup to the Internet (***Router*** or ***Bridge***).

Firmware version Version number of the currently installed device software. You will also need to give your provider this number.

➥ If necessary, click the ***Refresh*** button to refresh the data in the status display.

Internet

Status > ***Internet***

The connection settings for your Gigaset SE680 WiMAX are displayed in the ***Internet*** submenu.

Connection status The status of the radio connection with the WiMAX network is displayed as follows:

- ***connected*** = The Gigaset SE680 WiMAX has established a radio connection with a WiMAX network. You will see the connection duration in brackets and in the format ddd:hh:mm:ss (d=days, h=hours, m=minutes, s=seconds).
- ***disconnected*** = The Gigaset SE680 WiMAX is trying to establish a connection with a WiMAX network.

IP address
Subnet mask For an existing Internet connection only:
Displays the public IP address and subnet mask via which your Gigaset SE680 WiMAX establishes the connection with the Internet.

MAC address For an existing Internet connection only:
The MAC address uniquely identifies a network component within a network, in this case the public MAC address of your Gigaset SE680 WiMAX within the WiMAX network you use.

Default gateway For an existing Internet connection only:
Displays the gateway the Gigaset SE680 WiMAX uses for connecting to the Internet.

DHCP server IP address of the DHCP server with which the Gigaset SE680 WiMAX is connected. While the Gigaset SE680 WiMAX has not been assigned an IP address by the WiMAX network, the field stays empty.

Preferred DNS server
Alternate DNS server For an existing Internet connection only:
Displays the domain name server the Gigaset SE680 WiMAX uses to convert names to IP addresses.

Address Translation (NAT) Displays whether NAT mode is activated on your Gigaset SE680 WiMAX. NAT converts the internal IP addresses of the PCs in your network to public IP addresses. This maintains the confidentiality of your internal IP addresses.

➥ If necessary, click the ***Refresh*** button to refresh the data in the status display.

Local network LAN

Status > ***Local Network***

The configuration of the local network is displayed in the ***Local Network*** submenu.

IP address	IP address used by the Gigaset SE680 WiMAX in your local network: 192.168.2.1
Subnet mask	Subnet mask of your local network: 255.255.255.0
MAC address	The MAC address uniquely identifies a network component within a network, in this case the local MAC address of your Gigaset SE680 WiMAX within your local network.
DHCP server	Displays whether the DHCP server of your Gigaset SE680 WiMAX is activated. As DHCP server, your Gigaset SE680 WiMAX assigns an IP address to all the PCs in the network. If the DHCP server is activated, you will see the network subscribers that have received your IP address from the DHCP server in the ***DHCP clients*** field. DHCP must be activated on a PC for the PC to receive an IP address from the DHCP server. For more information see the document "Configuring the local area network" on the product CD.

➞ If necessary, click the ***Refresh*** button to refresh the data in the status display.

Device status

Status > ***Device Status***

The device status of your Gigaset SE680 WiMAX is displayed in the ***Device Status*** submenu.

System uptime	Operating time of your Gigaset SE680 WiMAX since it was last restarted. The operating time is given in the format ddd:hh:mm:ss (d=days, h=hours, m=minutes, s=seconds).
System time	Displays the current date and time. This information is transmitted to your Gigaset SE680 WiMAX by the WiMAX network.
Operating Mode	Role played by your Gigaset SE680 WiMAX during connection setup to the Internet (***Router*** or ***Bridge***).
Device temperature	Current device temperature **inside** your Gigaset SE680 WiMAX. In the event of overheating, the Gigaset SE680 WiMAX switches off.
System Log	Error protocol in which you will find information about problems.

➞ If necessary, click the ***Refresh*** button to refresh the data in the status display.

Radio status

Status > ***Radio Status***

Information about received and sent data as well as possible data transmission errors is displayed in the ***Radio Status*** submenu.

Connected to a base station

Indicates whether or not your Gigaset SE680 WiMAX is connected to a base station.

Base station ID

ID number of the base station to which the device is connected.

MAC state

Status of the connection setup to the base station. The information shown here is only intended for technically experienced users. The status of the connection to the base station is shown under ***Connected to a base station***.

Received power level

Receive level from the WiMAX base station. Values in the range -70 dBm to -10 dBm are considered optimum. You can ensure this by optimising the antenna direction.

Transmitted power level

Current transmission power.

Carrier to interference and noise ratio

Measurement of the reception quality of the base station. The higher the value, the better the quality of the data transfer to the base station.

Centre frequency of current uplink channel

Currently used uplink frequency. The reading changes frequently during the measurement.

Centre frequency of current downlink channel

Currently used downlink frequency.

Current channel bandwidth

Currently used bandwidth.

Radio port uplink current average throughput

Average approximate uplink throughput in one second, moving average (5 samples).

Radio port downlink current average throughput

Average approximate downlink throughput in one second, moving average (5 samples).

Current uplink modulation scheme

Currently used uplink modulation type.

Current downlink modulation scheme

Currently used downlink modulation type.

➔ If necessary, click the ***Refresh*** button to refresh the data in the status display.

Using the Gigaset SE680 WiMAX

When you have finished configuring your Gigaset SE680 WiMAX modem, use it to surf the Internet, send e-mails etc.

As soon as you attempt to access the Internet with a PC connected to the Gigaset SE680 WiMAX modem (for example, by opening the Web browser and calling up an Internet site, or by starting your e-mail program and retrieving e-mails), your Gigaset SE680 WiMAX modem automatically establishes a connection to the Internet or uses the permanent Internet connection. Whether the connection needs to be established or is permanently available depends on your provider's default settings.

Appendix

Troubleshooting

In the case of network problems troubleshooting may be difficult, as miscellaneous network parameters may be affected. This section only describes problems which are associated with the Gigaset SE680 WiMAX modem and the antenna.

Symptom	Possible cause and solutions
No LED does light up.	The Gigaset SE680 WiMAX modem its not connected to the mains. ➞ Check if the indoor unit is connected correctly. ➞ Check if the power socket is live.
The CONNECT LED does not light up.	The Gigaset SE680 WiMAX modem is not registered to a base station. ➞ Check the cable connections. If necessary, charge a qualified electrician to check the installation.
The Gigaset SE680 WiMAX modem switches itself off.	The Gigaset SE680 WiMAX modem is not ready for use. The device may be too hot. In this case, the integrated overheating protector prevents the Gigaset SE680 WiMAX modem from being damaged. If the temperature rises, the Gigaset SE680 WiMAX automatically reduces data transfer to a minimum. When the temperature exceeds the critical value, the Gigaset SE680 WiMAX modem switches itself off. ➞ Wait until the Gigaset SE680 WiMAX modem has cooled down. ➞ Check the device status of your Gigaset SE680 WiMAX modem, see chapter "Device status" on page 36. ➞ If the Gigaset SE680 WiMAX modem does not work after the device has been restarted, please contact your provider/service technician.

Symptom	Possible cause and solutions
The Gigaset SE680 WiMAX modem can not be reached via LAN (Ethernet).	➔ If you operate the Gigaset SE680 WiMAX modem in bridge mode, first check the following: 1. In bridge mode the PC must be connected directly to the Gigaset SE680 WiMAX modem. 2. To configure the Gigaset SE680 WiMAX modem the PC must have a static IP address assigned. ➔ If you operate the Gigaset SE680 WiMAX modem in router mode, precede as follows: 1. Check all cable connections. 2. Enter a **`ping`** command to your own computer using **`ping 127.0.0.1`**, see "Checking the connection to the Gigaset SE680 WiMAX" on page 42. If an error is reported, reinstall the TCP/IP network protocol. 3. Enter a **`ping`** command to the Gigaset SE680 WiMAX modem using **`ping 192.168.2.1`** (if you did not change the IP address). If errors are reported, ensure that the digits in the first three address parts of the PCs IP address are the same as in the IP address of the Gigaset SE680 WiMAX modem. If not all test packets sent will be reported as faulty, change the Ethernet cables. They may be faulty. 4. Read the document "Configuring the local area network" on product CD.
You forgot the system password.	➔ Ask your provider to reset the password to **user** via remote management.
No connection to the configuration environment is possible.	➔ Check the connection to your Gigaset SE680 WiMAX modem, see page 42.

Other faults and problems

You are using a firewall on the PC that prevents access to the Gigaset SE680 WiMAX modem

Test this, if necessary, by briefly switching off the firewall. If access is possible, configure the firewall. For details, refer to the user guide for your firewall.

You have forgotten the system password

If you set or changed the system password by yourself and you will forget it, your Gigaset SE680 WiMAX modem must be reset to the factory default settings.

Power failure

No data will be lost.

Before contacting customer service or your provider

- First exclude all the faults listed in this section.
- Have the documentation supplied by your provider ready.
- If you can open the configuration progam in the Web browser, click on the ***Status*** tab.
- Note the number in the ***Firmware version*** field. This is the number of the currently installed device software.
- Open the ***Local Network*** submenu and note the entry consisting of numbers and letters in the ***MAC address*** field. The MAC address is used for the globally unique identification of your device.
- Leave the PC switched on and the configuration progam open when you phone customer service or your provider. They might need still more information, which you will find on the status pages.

Checking the connection to the Gigaset SE680 WiMAX

You can check whether the PC is correctly connected to the Gigaset SE680 WiMAX modem. This can be done as follows:

➡ Open the command prompt on the PC:

– Click on ***Start*** > ***Run***.

– Enter **cmd** in the input field and click on ***OK***.
The ***Command prompt*** window opens.

➡ Check whether the Gigaset SE680 WiMAX modem responds with the ping command. Enter **ping 192.168.2.1** and press Enter.

```
C:\>ping 192.168.2.1
```

The PC now sends some test packets via this connection and checks whether the connection partner responds. The connection partner may respond in the following ways:

- **Reply from the IP address of your** Gigaset SE680 WiMAX modem; statistics about the connection are presented. If you receive these statistics, the connection to the device is OK.
- **The request exceeds the time limit**; it was not possible either to send or receive any packets. There is no physical connection between the PC and your Gigaset SE680 WiMAX modem. Check the following points:
  – Is the Ethernet cable between the Gigaset SE680 WiMAX modem and the PC properly connected?
  The **LAN** LED on the Gigaset SE680 WiMAX modem must light up.
  – Has TCP/IP been properly configured on your PC?
  If the Gigaset SE680 WiMAX modem has the IP address 192.168.2.1, your PC's IP address must be between 192.168.2.2 and 192.168.2.254. The subnet mask must be 255.255.255.0.
  To find out the IP address of your PC, enter **ipconfig** in the command prompt.

```
C:\>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection

        Connection-specific DNS Suffix. . :
        IP Address. . . . . . . . . . . . : 192.168.2.5
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . : 192.168.2.1

C:\>_
```

If the Gigaset SE680 WiMAX modem has not responded successfully to the **ping** command, you need to adjust the network settings on the PC. To find out how to do this, please read the document "Configuring the local area network" on the product CD.

If the Gigaset SE680 WiMAX modem has responded successfully to the **ping** command, the network is configured correctly. If it is not possible to access the configuration progam of your Gigaset SE680 WiMAX modem, check and change the settings in your Web browser. To find out how to do this, please read the next chapter.

Configuring the Web browser

If you are using a current Web browser but cannot open the configuration progam in it, check the Web browser settings.

i	We recommend Microsoft Internet Explorer Version 7.0 or Mozilla Firefox 2.0 as the Web browser.

- Do not use an HTTP proxy for accessing your Gigaset SE680 WiMAX modem.
- Java and Javascript must be enabled.
- Popup windows must be enabled for your Gigaset SE680 WiMAX modem.

The following descriptions relate to Internet Explorer Version 7.0 and Mozilla Firefox Version 2.0.

Setting up an HTTP proxy

An HTTP proxy is a buffer for Internet pages that have been called up. For example, once called up, a page can continue to be shown even if you are currently offline. However, this buffer would prevent the configuration pages being read again when you call up the configuration for your Gigaset SE680 WiMAX modem; for this reason, your Gigaset SE680 WiMAX modem can only be configured if the HTTP proxy is not being used for local pages.

Check the HTTP proxy in the Web browser you wish to use for the configuration.

Internet Explorer 7.0:

➥ Open Internet Explorer.

➥ Click on ***Tools*** and then on ***Internet Options***.

➥ Open the ***Connections*** tab.

➥ Click on ***LAN settings***.

➥ If the option ***Use proxy server for LAN*** is activated in the ***Proxy server*** area, activate the selection field ***Circumvent proxy server for local addresses***. If the option ***Use proxy server for LAN*** is not activated, you do not need to make any settings.

➥ Click on ***OK*** and then ***OK*** again to close the ***Internet Options*** window.

Firefox 2.0:

➞ Open Firefox.

➞ Click on ***Tools*** and then on ***Settings***.

➞ Click on ***Advanced***.

➞ Open the ***Network*** tab and click on ***Settings*** in the ***Connection*** area.

➞ Select either ***Direct connection to the Internet*** or ***Manual proxy configuration***. If you have chosen ***Manual proxy configuration***, in the ***No proxy for:*** field, enter the IP block in which the IP address of your Gigaset SE680 WiMAX modem is found: **192.168.2.0/24**

➞ Click on ***OK*** and then ***OK*** again to close the ***Settings*** window.

Allowing JavaScript and Java

Internet Explorer 7.0:

➞ Open Internet Explorer.

➞ Click on ***Tools*** and then on ***Internet Options***.

➞ Open the ***Security*** tab.

➞ Select the ***Local Intranet*** entry as the Web content zone.

➞ Click on the ***Sites*** button.

➞ Select the ***Include all sites that circumvent the proxy server*** entry.

➞ Click on ***OK*** and then ***OK*** again to apply the settings.

Firefox 2.0:

➞ Open Firefox.

➞ Click on ***Tools*** and then on ***Settings***.

➞ Click on ***Content***.

➞ Check the ***Activate JavaScript*** and ***Activate Java*** boxes.

➞ Click on ***OK*** to apply the settings.

Allowing pop-up windows

Pop-up windows are small windows that are opened either as the result of an action or automatically. The device software for your Gigaset SE680 WiMAX modem uses pop-up windows to display the online Help, for example.

Many Internet sites, however, call up distracting pop-up windows for effective advertisement placement, for example, without detracting from the layout of the site itself. To prevent these pop-up windows from opening, current Web browsers offer pop-up blockers.

If necessary, you can configure the pop-up blocker to display desirable pop-up windows and to block undesirable windows.

i	If you are using a different pop-up blocker, configure it to allow pop-up windows for the IP address 192.168.2.1.

Internet Explorer 7.0:

➡ Open Internet Explorer.

➡ Click on ***Tools*** and then on ***Pop-up Blocker*** and choose ***Pop-up Blocker Settings***.

➡ Enter the IP address of your Gigaset SE680 WiMAX modem as the Website address: **`192.168.2.1`**

➡ Click on the ***Add*** button.

➡ Click on ***Close*** to apply the settings.

Firefox 2.0:

➡ Open Firefox.

➡ Click on ***Tools*** and then on ***Settings***.

➡ Click on ***Content***.

➡ If the ***Block pop-up windows*** check box is activated, click to its right on ***Exceptions***.

➡ Enter the IP address of your Gigaset SE680 WiMAX modem as the Website address: **`192.168.2.1`**

➡ Click on the ***Allow*** button.

➡ Click on ***Close*** and on ***OK*** to apply the settings.

Specifications

Model	Gigaset SE680 WiMAX
Dimensions	
Outdoor Modem:	approx. 228.5 x 208 x 101 mm
Indoor unit:	approx. 140 x 65 x 36 mm
Operating temperature	
Outdoor Modem:	–40 °C to +60 °C
Indoor unit:	0 °C to +40 °C
Network interface	1 Ethernet 10/100BaseT (RJ45, LAN)
Frequency	2.3–2.4 / 2.5–2.7 / 3.4–3.6 GHz
Output power	up to 26 dBm at QAM-16
Power consumption	3-6 W on DC input depending on operational state
Bandwidth	optional: 3.5 / 5.0 / 7.0 or 10.0 MHz
Type of transmission	TDD
Modulation technique	SOFDMA 512/1024
Subcarrier modulation	QPSK, 16/64 QAM in up- and download
Antenna socket, optional	50 Ohm N
Antenna type	2 internal antennae (2xRX, 1xTX) for MIMO Matrix A & B; Type DN1 (EN 302 326-3 V1.2.2) Optional: outdoor antenna
Antenna gain	10 / 11 dBi (2.6 / 3.5 GHz)
Mains adapter	Input: 100–240 V AC, Power over Ethernet (PoE)

Specifications for outdoor antenna (optional)

Model	outdoor antenna
Operating temperature	–40°C to +70°C
Storage temperature	–40°C to +70°C
Frequency	2.5–2.7 GHz or 3.4–3.6 GHz
Antenna socket	50 Ohm
Antenna gain	3,5 GHz: 18 dBi 2,6 GHz: 15 dBi
Antenna polarisation	Vertical or horizontal

Putting into service

This device is intended for use in the country indicated on the device's label.

The device is operated under a single licence, which is held by your service provider. **Contact your service provider regarding licensing before you put the device into service.**

Please observe the legal provisions and local restrictions when putting the device into service. Please ask your service provider for further information.

CE declaration

This device is intended for use with WiMAX base stations.

We, Sagem Communications SAS, declare that this device meets the essential requirements and other relevant regulations laid down in Directive 1999/5/EC. National laws and regulations must be considered before putting the device into service.

A copy of the 1999/5/EC declaration of conformity is available at this Internet address:
http://support.sagem-communications.com/

CE ⓘ

WEEE

All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
This crossed-out wheeled bin symbol on the product means the product is covered by the European Directive 2002/96/EC.
The correct disposal and separate collection of your old appliance will help prevent potential negative consequences for the environment and human health. It is a precondition for reuse and recycling of used electrical and electronic equipment.
For more detailed information about disposal of your old appliance, please contact your local council refuse centre or the original supplier of the product.

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WPA supplicant

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Glossary

Address Translation (NAT)
Network **A**ddress **T**ranslation. NAT is a method for converting IP addresses (mainly private IP addresses) in a network to one or more public IP addresses on the Internet. With NAT, several network components in a LAN can share a public IP address to connect to the Internet. The network components of the local network are hidden behind the IP address registered on the Internet. NAT is often used as part of the firewall in a network because of this security function.

Bridge
A bridge connects several network segments to form a joint network, e.g. to make a TCP/IP network. The segments can have different physical characteristics, e.g. different linking such as Ethernet and wireless LANs. Local networks can be expanded by linking individual segments via bridges.

dB
Deci**b**el (a tenth of a Bel). Logarithmic unit of measurement for ratios between two currents, voltages, sound levels or powers. In order to depict large value differences clearly and graphically, these are given in dB; e.g. 60 dB corresponds to the factor 1000 relative to the voltage drops.

dBm
Deci**b**el **m**illiwatt. Power level in decibels relative to 1 milliwatt.

DHCP
Dynamic **H**ost **C**onfiguration **P**rotocol. DHCP handles the automatic assignment of IP addresses to network components.
DHCP was developed because in large networks – especially the Internet – the defining of IP addresses is very complex as subscribers frequently move, drop out or new ones join. A DHCP server server automatically assigns the connected network components (DHCP clients) dynamic IP addresses from a defined IP pool range, thus saving a great deal of configuration work. In addition, the address blocks can be used more effectively: since not all subscribers are on the network at the same time, the same IP address can be assigned to different network components in succession as and when required.

DHCP server
There is a DHCP integrated into the Gigaset SE680 WiMAX modem that automatically assigns IP addresses to PCs in the local network.

DNS

Domain **N**ame **S**ystem. DNS permits the assignment of IP addresses to PC or domain names that are easier to remember. A DNS server must administer this information for each local network with an Internet connection. As soon as a page on the Internet is called up, the Web browser obtains the corresponding IP address from the DNS server so that it can establish the connection.

On the Internet, the assignment of domain names to IP addresses follows a hierarchical system. A local PC only knows the address of the local name server. This in turn knows all the addresses of the PCs in the local network and the superordinated name servers, which again know addresses and the next superordinated name servers.

Domain name

The domain name is the reference to one or more web servers on the Internet. The domain name is mapped via the DNS service to the corresponding IP address.

Downlink

Files that your Gigaset SE680 WiMAX modem receives and forwards to your local network.

DSL

Digital **S**ubscriber **L**ine. DSL is a technique whereby data is transmitted via the conventional phone line. To do this, you require suitable phone lines and special technology to be set up by a Provider. As these preconditions are not satisfied in all areas, it is not possible to use DSL in all locations. In order to make use of high-performance Internet access in these areas as well, technologies such as WiMAX, Wi-Fi or satellite connections are implemented.

Ethernet

Ethernet is a network technology for local networks (LANs) defined by the IEEE as standard IEEE 802.3. Depending on the network adapter used, the transmission speed on the Ethernet varies between 10 Mbps and 1 Gbps.

Firewall

Firewalls are used by network operators as protection against unauthorised external access. This involves a whole bundle of hardware and software actions and technologies that monitor and control the data flow between the private network to be protected and an unprotected network such as the Internet.

Firmware

Device software. To correct errors or update the device, a new firmware version can be loaded onto the device's memory (firmware update).

Flat rate

Flat rate is a particular billing system for Internet connections. The Provider charges a set monthly fee for a certain service package.

FTP

File **T**ransfer **P**rotocol. Protocol for exchanging files via the Internet. FTP is used, for example, to make files available for download or to receive files from other users.

Full duplex

Data transmission operating mode in which data can be sent and received at the same time.

FXS

Foreign E**x**change **S**tation. Phone port to which an analogue terminal (phone, fax or answer machine) can be connected.

Gateway

A gateway connects networks with one another. In contrast to a Router, a gateway is not dependent on protocol, i.e. it is also able to establish connections between networks with a different architecture (protocols, application interfaces etc.).

Half duplex

Operating mode for data transfer. Only one party can receive or send data at a time.

HTTP

Hyper**t**ext **T**ransfer **P**rotocol. Network protocol for the transmission of data, which is mainly used for transmitting and displaying Internet content.

HTTP proxy

An HTTP proxy is a server that network components use for their Internet traffic. All requests are sent via the proxy.

Hub

A hub is a central distribution point in a network, to which PCs and other network devices are connected. The hub forwards received data to all connected PCs. For this reason, in large networks, a Switch is recommended to ensure that data is only sent to the PC requesting it.

IEEE

Institute of **E**lectrical and **E**lectronics **E**ngineers. The IEEE is an international body for defining network standards, especially for standardising LAN technologies, transmission protocols and speeds, and wiring.

IEEE 802.16

Standard defined by the IEEE for WiMAX. Similarly to other standards in the 802 series (e.g. 802.3 Ethernet, 802.11 WLAN), the WiMAX standard is one of the standards for networks. The standard has progressed in accordance with new developments; there are currently two main versions:

- IEEE 802.16-2004: WiMAX, which specifies the secure location for connection partners.
- IEEE 802.16e-2005: Mobile WiMAX, which enables wireless cells to be exchanged during data transmission.

IP

Internet **P**rotocol. The protocol is responsible for addressing of subscribers in a network using IP addresses, and routes data from the sender to the recipient. In doing so, it decides on the way in which data packets will be forwarded between sender and recipient.

IP address

An IP address is the unique network-wide address of a network component in a network based on the TCP/IP protocol (e.g. in a local network or on the Internet). The IP address consists of four parts (each of up to three-figure strings of digits from 0–255) that are separated from one another by full stops (e.g. 192.168.2.1). The IP address is made up of the network number and the number of the network component. Depending on the Subnet mask, one, two or three parts form the network number, the remainder form the network component number. You can find out the IP address of your PC using the **`ipconfig`** command.
There are two different types of IP address:

- **Private IP address**:
  IP address of a network component within a local network.
- **Public IP address**:
  IP address that uses a network component for accessing the Internet.

IP addresses can be assigned manually or automatically:

- **Static IP address**:
  The IP address is manually assigned to a network component and never changes.
- **Dynamic IP address**:
  The IP address is assigned to the network component by a DHCP server. The IP address of this network component can change each time it registers with a network or at specific time intervals.

On the Internet, domain names are normally used instead of the IP addresses. DNS is used to assign domain names to IP addresses.

IPTV

Internet **P**rotocol **Tele**v**i**sion. You receive your provider's television service via the DSL connection. To do this, you require an IPTV-capable set-top box and the configuration data of your IPTV provider.

ISP

Internet **S**ervice **P**rovider. See Provider.

LAN

Local **A**rea **N**etwork, local network. A local network links network components so that they can exchange data and share resources. The physical range is restricted to a particular area (a site). A local network can be connected to other local networks or a wide-area network (WAN) such as the Internet.

LED

Light **E**mitting **D**iode. An LED is an electronic component (semi-conductor) that generates light at low power consumption. LEDs are often used as signal lights for display and UI elements.

Login

Access to a PC or a service, password e.g. for access to the Internet.

MAC address

Media **A**ccess **C**ontrol. The MAC address is used for the globally unique identification of a network adapter. It comprises six parts (hexadecimal numbers), e.g. 00-90-96-34-00-1A. The MAC address is assigned by the network adapter manufacturer and cannot be changed.

Mbps

Million **b**its **p**er **s**econd. Specification of the transmission speed in a network.

Network

A network is a group of devices connected in wired or wireless mode so that they can share resources such as data and peripherals. A general distinction is made between local networks (LANs) and wide-area networks (WANs).

Network adapter

The network adapter is the hardware device that creates the connection between a network component and a local network. The connection can be wired or wireless. An Ethernet network card is an example of a wired network adapter. The Gigaset PC Card 108 and the Gigaset USB Adapter 108 are examples of wireless network adapters. A network adapter has a unique address, the MAC address.

Network protocol

The network protocol is the standard via which different PCs exchange data in a network. A connection can only be established between PCs in a network if they all use the same protocol. The TCP/IP network protocol is the most extensive network protocol, which is also used for connections to the Internet. This must be set up on each PC from which a network connection is to be established.

Port

Data is exchanged between two applications in a network across a port. The port number addresses an application within a network component. The combination of IP address/port number uniquely identifies the recipient or sender of a data packet within a network. Some applications (e.g. Internet services such as HTTP or FTP) work with fixed port numbers; others are allocated a free port number whenever they need one.

Port forwarding

In port forwarding, the Gigaset SE680 WiMAX directs data packets from the Internet that are addressed to a particular Port to the corresponding port of the appropriate network component. This enables servers within the local network to offer services on the Internet without them needing a public IP address. See also: Virtual server

Protocol

A protocol describes the agreements for communicating on a network. It contains rules for opening, administering and closing a connection, as well as about data formats, time frames and handling possible errors. Communications between two applications require different protocols at various levels, e.g. the TCP/IP protocols for the Internet.

Provider

A provider (Internet Service Provider) offers access to the Internet for a fee.

RJ

Registered **J**ack. Standardised connection, also known as a modular jack.

Router

A router directs data packets from one local area network (LAN) to another via the fastest route. A router enables the connection between networks of different network technologies and this is performed on the basis of a common protocol. For example, it can link a local network with WiMAX technology to the Internet.

RSSI

Received **S**ignal **S**trength **I**ndication. Characteristic value for the signal strength of radio connections, used by communication devices for the automatic selection of a suitable channel.

Server

A server makes services available to other network components (clients). The term "server" is often used to refer to a PC. However it can also mean an application that provides a particular service such as DNS, DHCP or a Web service.

SMTP

Simple **M**ail **T**ransfer **P**rotocol. The SMTP protocol is a TCP/IP protocol and regulates the exchange of electronic post on the Internet. Your Provider provides you with access to an SMTP server.

Subnet

A subnet divides a network into smaller units.

Subnet mask

The subnet mask determines how many parts of the IP addresses of a network represent the network number and how many parts represent the network component number. If the subnet mask in a network is 255.255.255.0, for example, this means that the first three parts of the IP address make up the network number and only the last part can be used to assign network component numbers. The first three parts of the IP address of all network components are in this case always the same.

Switch

A switch is a central distributor in a wired network, which, unlike a hub, provides intelligent distribution of data transfer. The switch only ever forwards a data packet to the subnet or network component the data packet is intended for. Unnecessary transfer of data in the network thus avoided.

TAE

Telecommunications connecting unit (German: **T**elekommunikations-**A**nschluss**e**inheit). Connector for connecting analogue telecommunications devices. F for phone, N for additional devices such as fax or answer machines.

TCP

Transmission **C**ontrol **P**rotocol. TCP is part of the TCP/IP protocol family. TCP handles data transport between communication partners (applications). TCP is a session-based transmission protocol, i.e. it sets up, monitors and terminates a connection for transporting data.

TCP/IP

Transmission **C**ontrol **P**rotocol/**I**nternet **P**rotocol. Protocol family on which the Internet is based. IP forms the basis of each PC to PC connection. TCP provides applications with a reliable transmission link in the form of a continuous data stream. TCP/IP is the basis on which services such as WWW, Mail and News are built. There are other protocols as well. In order to access the Internet from a PC, TCP/IP must be set up on the PC.

UDP

User **D**atagram **P**rotocol. UDP is a Protocol of the TCP/IP protocol family that handles data transport between two communication partners (applications). Unlike TCP, UDP is a non-session based protocol. It does not establish a fixed connection. The recipient is responsible for making sure the data is received. The sender is not notified about whether it is received or not.

Uplink

Data that your Gigaset SE680 WiMAX modem forwards from your PC or local network to external sites (e.g. to the Internet).

URL

Universal **R**esource **L**ocator. Globally unique address of a domain on the Internet, e.g. http://www.sagem-communications.com.

Virtual server

A virtual Server provides a service on the Internet that runs not on itself, but on another network component. The Gigaset SE680 WiMAX can be configured as a virtual server. It will then direct incoming calls for a service via Port forwarding directly to the appropriate Port of the network component in question.

WAN

Wide **A**rea **N**etwork. A WAN is a network that is not restricted to one particular area, such as the Internet. A WAN is run by one or more public providers to enable private access. You access the Internet via a Provider.

WiMAX

Worldwide **I**nteroperability for **M**icrowave **A**ccess. WiMAX is a modern wireless network technology that enables fast Internet connection even in remote areas where no other connection possibility (e. g. DSL) is available.

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